21. **Emission Standards and Limitations (40 CFR 63.342):**

a. The Permittee shall determine and apply maximum achievable control technology (MACT) to limit chromium emissions in accordance with all provisions of 40 CFR § 63.342.

b The chromium emission limitations are applicable during tank operation including periods of start-up and shutdown. The emission limitations do not apply during periods of malfunction, but the work practice standards outlined in 40 CFR 63.342(f) must be followed during malfunctions.

c. The Permittee shall control chromium emissions discharged to the atmosphere by using one of the following methods:

1. Chromium emissions discharged to the atmosphere will be controlled and the Permittee shall not allow the concentration of total chromium in the exhaust gas stream discharged to the atmosphere to exceed 0.01 mg/dscm (4.4×10^{-6} gr/dscf), or

2. Compliance may also be achieved if a chemical fume suppressant containing a wetting agent is used, by not allowing the surface tension of the anodizing bath contained within the affected source to exceed 45 dynes per centimeter (dynes/cm) (3.1×10^{-3} pound-force per foot {lb_f/ft}) at any time during operation of the tank.

d. These standards will not be met by using a reducing agent to change the form of chromium from hexavalent to trivalent.

e. The Permittee shall not allow emissions into the atmosphere of all acid fumes other than chromic acid fumes, to exceed three (3) pounds per day or 1,000 pounds per year.

22. **Work Practice Standards (40 CFR 63.342[f]):**

a. At all times, including start-up, shut down and periods of malfunction the Permittee shall operate and maintain the process in a manner consistent with good air pollution control practices, consistent with the operation and maintenance (O&M) plan. In addition:

1. Malfunctions shall be corrected as soon as practicable and in accordance to the O&M manual.

2. O&M requirements are enforceable independent of emissions limitations or other requirements in other standards.

3. Determination of whether acceptable operation and maintenance procedures are being used will be based on information available to the Control Officer. Based on the results of the determination made under the preceding paragraph, the Control Officer may require that the Permittee make changes to the O&M plan.

4. The Permittee shall provide a O&M plan as outline in 40 CFR 63.342(f)(3)(i)-(vi).

b. The Permittee shall comply with the work practice standards related to the packed-bed scrubber (PBS) which require the following steps:

1. Visually inspect the PBS to ensure there is proper drainage, no chromic acid buildup on the packed beds, and no evidence of

chemical attack on the structure integrity of the PBS at least once per quarter.

2. Visually inspect back portion of the mist eliminator to ensure that it is dry and there is no breakthrough of chromic acid mist at least once per quarter.
3. Visually inspect duct work from tank or tanks to the PBS to ensure there are no leaks at least once per quarter.
4. Add fresh makeup water to the top of the PBS whenever makeup is added:
   A. If greater than 50 percent of the scrubber water is drained for any purpose, make-up water may be added to the scrubber basin.
   B. For horizontal-flow scrubbers, top is defined as the section of the unit directly above the packing media such that the make-up water would flow perpendicular to the air flow through the packing.

c. The Permittee will prepare an O&M plan as outlined in 40 CFR 62.342(f)(3) that will be implemented by the compliance date. The conditions of this O&M plan will be adhered to as part of compliance with this and future permits related to this affected source.

1. If modifications to this process and/or a permit are required, the O&M plan will be revised to indicate such modifications. If the O&M plan is revised, the Permittee will keep previous versions of the O&M plan on record and available for inspection upon request for five years after each revision to the plan.
2. If the O&M plan fails to address or inadequately addresses a malfunction at the time the plan is initially developed, the Permittee will revise the O&M plan within 45 days after such a malfunction occurs. The revised plan shall include procedures for operating the equipment during similar events. A copy of the revised O&M plan shall be submitted to the Control Officer.
3. If actions taken by the Permittee during a malfunction are inconsistent with the O&M plan, the Permittee will record the actions taken for that event and shall report such actions within two (2) working days after commencing actions inconsistent with the plan. This initial notification will be followed by a letter within seven (7) working days after the malfunction.
4. The written O&M plan will be kept on record after it is developed and will be available for inspection upon request for the life of the affected source or until the source is no longer subject to the provisions of these permit conditions.

23. **Compliance:** The Permittee will comply with all conditions of this permit immediately upon start-up of the process (40 CFR 63.343).

a. Initial Compliance:

1. The Permittee shall conduct an initial performance test using the procedures and test methods listed in 40 CFR §63.7 and 40 CFR §63.344, or other appropriate test methods as approved by the Control Officer.
2. An initial performance test is not required if the Permittee meets all the criteria in 40 CFR 63.343(b)(2) and 63.343 (b)(3).

b. Continuous Compliance:

1. The Permittee shall determine the outlet chromium concentration using the procedures in 40 CFR §63.344(c), or other appropriate procedures as approved by the Control Officer and shall establish as site-specific operating parameters the pressure drop across the system and the velocity pressure at the common inlet of the PBS, setting the value that corresponds to compliance with the applicable emission limitation using the procedures in 40 CFR §63.344(d)(4) and 63.345(d)(5). The Permittee shall determine the outlet chromium concentration per 40 CFR 63.343.(c)(5) should chemical fume suppressants containing a wetting agent be used as a control device.
2. The Permittee may conduct multiple performance tests to establish a range of compliant operating parameter values.
3. The Permittee may set the compliant value as the average pressure drop and inlet velocity pressure measured over the three test runs of one performance test, and accept ± 1 inch of water column from the pressure drop value and ± 10 percent from the velocity pressure value as the compliant range.
4. On and after the date when the initial performance test is required to be completed per 40 CFR 63.7, the Permittee will monitor and record the velocity pressure at the inlet to the PBS and the pressure drop across the scrubber system once each day that any portion of, or the entire process is in operation.
5. The scrubber system will be operated within ± 10 percent of the velocity pressure value established during the initial performance test, and within ± 1 inch of water column of the pressure drop value established during the initial performance test, or within the range of compliant operating parameter values established during multiple performance tests.
6. If the Permittee learns that an alternative monitoring method would better suit this process, the Permittee may request in writing that an alternative monitoring method be accepted to meet the requirements of 40 CFR § 63.343. Once approval is received by the Control Officer the Permittee shall proceed with the proposed alternative methods to meet the requirements of 40 CFR § 63.343.

c. Should the Permittee elect to use a control device not listed in 40 CFR 63.342, then the procedures outlined in 40 CFR 63.343(d) shall be followed.

24. **Performance Test Requirements and Test Methods (40 CFR 63.344):**

a. Performance tests shall be conducted using the test methods and procedures in 40 CFR § 63.344 and 40 CFR § 63.7, or other appropriate test methods as approved by the Control Officer. The test shall be conducted in accordance with the above EPA methods and a test protocol shall be submitted to the Department at least thirty (30) days prior to the test for review and approval. The Permittee shall notify the Department ten days ahead of the exact date of the performance test to allow Department representatives to witness the test. Within forty-five (45) days after the completion of the performance test, a copy of all test results shall be submitted to the Department for review and approval.

b. Performance tests will be documented in complete test reports that contain:
   1. A brief process description;
   2. Sampling location descriptions(s);
   3. A description of sampling and analytical procedures and any modifications to standard procedures;
   4. Test results;
   5. Quality assurance procedures and results;
   6. Records of operating conditions during the test, preparation of standards, and calibrations procedures;
   7. Raw data sheets for field sampling and field and laboratory analyses;
   8. Documentation of calculations;
   9. Any other information required by the test method; and
   10. Identification of the company and name of the person conducting the tests.

c. Either EPA Method 306, EPA Method 306A (Determination of Chromium Emissions from Decorative and Hard Chromium Electroplating and Anodizing Operations), or other appropriate procedures as approved by the Control Officer, as described in 40 CFR § 63.344(c)(1), shall be used to determine the chromium concentration from the anodizing tanks.

d. The California Air Resources Board (CARB) Method 425 may be used to determine the chromium concentration from chromium anodizing tanks if the conditions outlined in 40 CFR 63.344(c)(2)(i) through 63.344(c)(2)(iii) are followed.

e. Method 306B, "Surface Tension Measurement and Record Keeping for Tanks used at Decorative Chromium Electroplating and Anodizing Facilities," or other appropriate test methods as approved by the Control Officer, shall be used to measure the surface tension of the anodizing baths.

f. As time progresses and the Permittee determines there are other test methods better suited for this process, such methods will be allowed if the proposed method has been validated using Method 301, or other approved test methods as approved by the Control Officer.

25. **Special Compliance Provisions for Multiple Sources Controlled by a Common Add-on Air Pollution Control Device (40 CFR 63.344{e}):**

a. To determine compliance with the applicable emission limitation, complete the following steps:

1. Calculate the cross-sectional area of each inlet duct (i.e., uptakes from each hood) including those not affected as per 40 CFR § 63.344(c).
2. Determine the total sample time per test run by dividing the total inlet area from all tanks connected to the control system by the total inlet area for all ducts associated with the affected source, and then multiply this number by 2 hours. The calculated time is the minimum sample time required per test run.
3. Perform EPA Method 306 testing, or other approved test methods as approved by the Control Officer, EPA Administrator, or designated representative, and calculate an outlet mass emission rate.
4. Determine the total ventilation rate from the affected sources by using equation 3 of 40 CFR §63.344(e)(4) as shown below:

$$VR_{tot} * (IDA_{i,a}/\text{Sum of } IA_{total}) = VR_{inlet,a} \quad (3)$$

Where: VR_{tot} is the average total ventilation rate in dscm/min for the three test runs as determined at the outlet by means of the EPA Method 306 testing, or other approved test methods as approved by the Control Officer; $IDA_{i,a}$ is the total inlet duct area for all ducts conveying chromic acid from each type of affected source performing the same operation (chromic anodizing tank), or each type of affected source subject to the same emission limitation; IA_{total} is the sum of all inlet duct areas from both affected and unaffected sources; and $VR_{inlet,a}$ is the total ventilation rate from all inlet ducts conveying chromic acid from each type of affected source performing the same operation (chromic acid anodizing), or each type of affected source subject to the same emission limitation.

5. Establish the allowable mass emission rate in milligrams of total chromium per hour (mg/hr) for each type of affected source that is controlled by the PBS using equation 4, 5, 6, or 7 (as appropriate) of 40 CFR §63.344(e)(4) as shown below:

$$VR_{hc1} * EL_{hc1} * 60 \text{ minutes/hour} = AMR_{hc1} \quad (4)$$

$$VR_{hc2} * EL_{hc2} * 60 \text{ minutes/hour} = AMR_{hc2} \quad (5)$$

$$VR_{dc} * EL_{dc} * 60 \text{ minutes/hour} = AMR_{dc} \quad (6)$$

$$VR_{ca} * EL_{ca} * 60 \text{ minutes/hour} = AMR_{ca} \quad (7)$$

Where “hc” applies to the total of ventilation rates for all hard chromium electroplating tanks subject to the same emission limitation, “dc” applies to the total of ventilation rates for the decorative chromium

electroplating tanks, “ca” applies to the total of ventilation rates for the chromium anodizing tanks, and EL is the applicable emission limitation in mg/dscm. There are two equations for hard chromium electroplating tanks because different emission limitation may apply (e.g., a new tank versus an existing, small tank).

6. Establish the allowable mass emission rate (AMR_{sys}) in mg/hour for the system using equation 8 of §63.344(e)(4), including each type of affected source as appropriate, shown below:

$$AMR_{hc1} + AMR_{hc2} + AMR_{dc} + AMR_{ca} = AMR_{sys} \quad (8)$$

7. The outlet three-run average mass emission rate determined from EPA Method 306 testing, or other appropriate test methods as approved by the Control Officer, should be equal to or less than the allowable mass emission rate calculated from equation 8.

b. The Permittee shall submit these measurements and calculations to support these compliance methods with the notification of compliance status required by §63.347(e).

26. **Establishing Site-Specific Operating Parameter Values (40 CFR 63.344{d}):**

a. All monitoring equipment shall be installed such that representative measurements of emissions or process parameters from the affected source are obtained. For monitoring equipment purchased from a vendor, verification of the operational status of the monitoring equipment must include execution of the manufacturer’s written specification or recommendation for installation, operation, and calibration of the system.

1. Specifications for differential pressure measurement devices used to measure velocity pressure must be in accordance with Section 2.2 of EPA Method 2 (40 CFR, Part 60, Appendix A), or other appropriate test methods as approved by the Control Officer.
2. Specifications for differential pressure measurement devices used to measure pressure drop across a control system must be in accordance with manufacturer’s accuracy specifications.

b. The surface tension of the anodizing baths will be measured using EPA Method 306B, or other approved test methods as approved by the Control Officer.

c. The Permittee is required to measure the velocity pressure at the inlet to the PBS and will establish the site-specific velocity pressure in accordance with procedures set forth in 40 CFR §63.344(d)(4)(i) and (ii).

d. The Permittee is required to measure the pressure drop across the PBS in accordance with §63.343(c)(i) thru 63.343.(4) or §63.344(d)(5)(i) thru (vi).

27. **Record Keeping (40 CFR 63.346):**

a. The Permittee must fulfill all record keeping requirements outlined in the General Provisions to 40 CFR Part 63, according to the applicability of

Subpart A as identified in Table 1 of 40 CFR Subpart N, as well as the following:

1. Inspection records for the PBS and monitoring equipment, to document that the inspection and maintenance required by the work practice standards of 40 CFR 63.342(f) and Table 2 of 40 CFR Part 63 Subpart N have taken place. The record should identify the device inspected, the date of inspection, a brief description of the working condition of the equipment during the inspection, and any actions taken to correct deficiencies found during the inspection.
2. Records of all maintenance performed on the affected source, the PBS, and monitoring equipment.
3. Records of the occurrence, duration, and cause (if known) of each malfunction of the PBS, process or monitoring equipment.
4. Records of actions taken during periods of malfunction when such actions are inconsistent with the O&M plan.
5. Other records necessary to demonstrate consistency with the provisions of the O&M plan.
6. Test reports documenting results of all performance tests, including the entity that conducted the tests.
7. All measurements as necessary to determine the conditions of performance tests, including measurements necessary to determine compliance with the special compliance procedures defined in 40 CFR 63.344(e).
8. Records of monitoring data used to demonstrate compliance with the emission standard including the date and time the data are collected.
9. The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during malfunction of the PBS or process equipment.
10. The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions, as indicated by monitoring data, that occurs during periods other than malfunction of the PBS, process or monitoring equipment.
11. The total process operating time of the affected source during the reporting period.
12. All documentation supporting the notifications and reports required by 40 CFR §63.9 and 40 CFR §63.10 of subpart A as well as 40 CFR §63.347.
13. Should the Permittee use fume suppressants to comply with the standards, records of the date and time that fume suppressants are added to the anodizing bath.

b. All records must be maintained for 5 years.

28. **Reporting (40 CFR 63.347):**

a. The Permittee shall fulfill all reporting requirements outlined in the General Provisions to 40 CFR Part 63, according to the applicability of Subpart A as identified in Table 1 of 40 CFR Part 63 Subpart N. These reports will be made to the Control Officer as requested in writing.
    1. Reports sent by U.S. mail must be postmarked on or before the specified date.
    2. Reports sent by fax or other courier must be received by the Control Officer on or before the specified date.
    3. Reports may be submitted on electronic media if acceptable by both the Permittee and the Control Officer. These reports must be received by the Control Officer on or before the specified date.

b. Initial Notification: The Permittee shall submit an initial notification (in addition to the notification of construction or reconstruction required by §63.345(b)) as follows:
    1. A notification of the date when construction or reconstruction was commenced, shall be submitted no later than 30 calendar days after such date; and
    2. A notification of the actual date of start-up shall be submitted within 30 calendar days after such date.

c. Notification of Performance Test:
    1. The Permittee must notify the Control Officer in writing of their intention to conduct a performance test at least 60 calendar days before the test is scheduled to begin.
    2. In the event that the Permittee is unable to conduct the performance test as scheduled, the provisions of 40 CFR 63.7(b)(2) of subpart A apply.

d. Notification of Compliance Status:
    1. The Permittee must submit to the department, a notification of compliance status signed by the responsible official who shall certify its accuracy, attesting to whether the affected source has complied with this subpart. The notification must list for the affected source:
        A. The applicable emission limitation and the methods that were used to determine compliance with this limitation.
        B. The performance test report documenting the results of the performance test, including measurements and calculations to support the compliance provisions, as well as the name of the company and person that conducted the test.
        C. The type and quantity of hazardous air pollutants (HAPs) emitted by the source reported in mg/dscm or mg/hr, or in the event the Permittee uses a fume suppressant with a wetting agent to control emissions form the chromic anodizing tank, the Permittee shall report the surface tension in dynes per centimeter (dynes/cm). The Permittee must state that this report either corrects or verifies the previous estimate.

D. For each monitored parameter for which a compliance value is to be established, the specific operating parameter value, or range of values, that corresponds to compliance with the applicable emission limit.

E. The methods that will be used to determine continuous compliance, including a description of monitoring and reporting requirements.

F. A description of the air pollution control technique for each emission point.

G. A statement that the Permittee has completed and has on file the O&M plan.

H. Records to document facility size (i.e., records of projected rectifier capacity for the first 12-month period of tank operation).

I. A statement that the Permittee has complied with all reporting requirements.

J. An identification of the entity conducting the tests.

2. A notification of compliance status must be submitted to the Control Officer no later than 90 calendar days following completion of the performance test demonstrating compliance.

e. Reports of Performance Test Results: Reports of performance test results must be submitted to the Control Officer as part of the notification of compliance status no later than 90 days following the completion of the performance test.

f. Ongoing Compliance Status Reports: The Permittee must submit a summary report to the Control Officer to document the ongoing compliance status of the affected source. These reports must be submitted semi-annually unless:

1. The Control Officer determines that more frequent reporting is necessary; or

2. The monitoring data collected shows that the emission limit has been exceeded, in which case quarterly reports shall be submitted until notified by the Control Officer.

3. The ongoing compliance status reports must contain the following:

A. Company name and address of the affected source;

B. An identification of the operating parameter that is monitored for compliance determination;

C. The relevant emission limitation for the affected source, and the operating parameter value, or range of values, that correspond to compliance with this emission limitation as specified in the notification of compliance status;

D. The beginning and ending dates of the reporting period;

E. A description of the type of process performed in the affected source;

F. The total operating time of the affected source during the reporting period;

G. A summary of operating parameter values, including the total duration of excess emissions during the reporting period as indicated by those values, the total duration of excess emissions expressed as a percent of the total source operating time during that reporting period, and a breakdown of the total duration of excess emissions during the reporting period into those episodes that were due to process upsets, PBS malfunctions, other known causes, and unknown causes;

H. A certification by a responsible official, that the work practice standards were followed in accordance with the O&M plan;

I. If the O&M plan was not followed, an explanation of the reasons for not following the provisions, an assessment of whether any excess emission and/or parameter monitoring the excess emission are believed to have occurred, and a copy of the reports required by 40 CFR §63.342(f)(3)(iv) documenting that the O&M plan was not followed;

J. A description of any changes in monitoring, processes, or controls since the last reporting period;

K. The name, title, and signature of the responsible official who is certifying the accuracy of the report; and

L. The date of the report.

If more than one monitoring device is used to comply with the continuous compliance monitoring required by 40 CFR §63.343(c), the Permittee must report the results as required for each monitoring device. However, when one monitoring device is used as a backup for the primary monitoring device, the Permittee must only report the results from the monitoring device used to meet the monitoring requirements of this subpart. If both devices are used to meet these requirements, then the Permittee must report the results from each monitoring device for the relevant compliance period.

g. Reports of Exceedances:

1. If the total duration of excess emissions (as indicated by the monitoring data collected by the Permittee for the affected source) is 1 percent or greater of the total operating time for the reporting; and the total duration of malfunctions of the add-on air pollution control device and monitoring equipment is 5 percent or greater of the total operating time, then semiannual reports of exceedances must be prepared and submitted the Control Officer.

2. Once the Permittee reports an excess emission as described above, ongoing compliance status reports must be submitted semiannually until a request to reduce reporting frequency is approved.

h. Reducing the Frequency of Ongoing Compliance Status Reporting: If reporting on a quarterly or more frequent basis, the Permittee may request a reduction in the frequency of reporting ongoing compliance to the Control Officer through the provisions in 40 CFR §63.347(g)(2).